n Publication number:

0 277 789 A3

12

EUROPEAN PATENT APPLICATION

(a) Application number: 88300815.3

2 Date of filing: 01.02.88

(5) Int. Cl.4: C 12 Q 1/06

//C12M1/34, G01N27/22

30 Priority: 04.02.87 JP 22481/87 09.09.87 JP 224018/87 06.11.87 JP 279060/87

43 Date of publication of application: 10.08.88 Bulletin 88/32

Ø Designated Contracting States:
AT CH DE FR GB IT LI NL SE

B Date of deferred publication of search report: 05.10.88 Bulletin 88/40

(7) Applicant: KABUSHIKI KAISHA KOBE SEIKO SHO 3-18, Wakinohamacho 1-chome Chuo-ku Kobe-shi Hyogo-ken 651 (JP)

(7) Inventor: Mishima, Ken A2-414 Shinsenri Minami-cho Toyonaka-shi Osaka (JP) Mimura, Akio 435-7 Miyashita Fuji-shi Shizuoka (JP)

Takahara, Yoshimass 5-28-8 Yatsu Narashino-shi Chiba (JP)

Asami, Kouji Yaocho 8 Hlgashihorikawa Nishihairu Shichijyo-dori Shimogyo-ku Kyoto-shi Kyoto (JP)

Hanai, Tetsuya 115 Tougawa Uji-shi Kyoto (JP)

(4) Representative: Wright, Hugh Ronald et al Brookes & Martin High Holborn House 52/54 High Holborn London WC1V 6SE (GB)

(4) Method for measuring biomass.

(F) A method for measuring a biomass which comprises measuring an electric capacitance across at least one pair of electrodes attached to a bioreactor, and thereby continuously measuring a biomass of organisms (such as microorganism and plant or animal cells), which may or may not be immobilized in the bioreactor, according to the electric capacitance (dielectric permitivity) measured. The present invention permits one to measure on-line the quantities of microorganisms or plant or animal cells without having to take samples from a bioreactor or culture tank.

0 277 78

Bundesdruckerei Berlin



EUROPEAN SEARCH REPORT

EP 88 30 0815

		DERED TO BE RELEVAN			
Category	Citation of document with i of relevant pa	ndication, where appropriate, assages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.3)	
Χ.	GB-A-2 136 130 (T.H. KRUEGER et al.) * page 5, line 103 - page 6, line 18; claims 1,7,15 *		1-5,7	C 12 Q 1/06 // C 12 M 1/34 G 01 N 27/22	
X	GB-A-2 177 801 (MALTHUS INSTRUMENTS LTD.) * page 2, lines 6-8; claims 1-10 *		1,2,4,5		
χ	DE-A-2 412 165 (P.J. METZGER) * page 4, lines 27 - page 5, line 5; claim 1 *		1		
A	IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol. BME-33, no. 2, Februar 1986, pages 242-247, New York, US; I. GIAEVER et al.: "Use of electric fields to monitor the dynamical aspect of cell behavior in tissue culture" * whole document *		1,4,6-8		
A	W.H. NELSON "Instrumental methods for rapid microbiological analysis", 1985, VCH Publishers, Inc., US; * pages 192-209 *		1-8	TECHNICAL FIELDS SEARCHED (Int. Cl.3) C 12 Q 1/00	
Е		3 802 114 (D.B. KELL) ims 1-6; page 7, lines 7-19 *		G 01 N 27/00 C 12 M 1/00 G 01 N 33/00	
Ε	WO-A-8 802 115 (D.B. KELL) * claims 1-12; abstract *		1-8		
	The precent search report has b	seen drawn un for all claims			
The present search report has been drawn up for all claims					
· · · · · · · · · · · · · · · · · · ·		Date of completion of the search 07-07-1988	DF K	Examiner DE KOK A.J.	
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		NTS T: theory or princ E: earlier patent d after the filing other D: document cited L: document cited &: member of the	T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document		

FORM 1503 03.82 (P040)